ABSTRACT OF THE DISCLOSURE

A rate generator for generating a plurality of different frequencies that represent video requests in a video on demand (VOD) system. The rate generator comprises a plurality of parallel groups, each group comprising a phase accumulator module having a plurality of phase accumulators, a phase increment model having a plurality of phase increment registers, and an adder, coupled to the phase accumulator module and the phase increment module. The adder sums the phase increment value from the phase from the phase increment module and the output of the phase accumulator module and provides the value back to the phase accumulator module. When the sum reaches a pre-determined value, the adder resets and generates a pulse at a frequency dependent on the phase increment and the sampling frequency. In addition, a method for deriving the rate generator architecture is also provided.